INTERACTIVE CLOUDS

# LOAD BALANCING WITH DREAMFACE

# GET STARTED BY DEFINING OBJECTIVES

Load Balancing is not just a feature, it is a requirement for a Enterprise class platform to run applications

*Cloud Application Platform*

## ROBUSTNESS

Architecture designed to support multi-tenancy

Service Continuity

## Reliability

Fail Over

manageable & configurable

## MONITOR & ALERT

Manage concurrent users

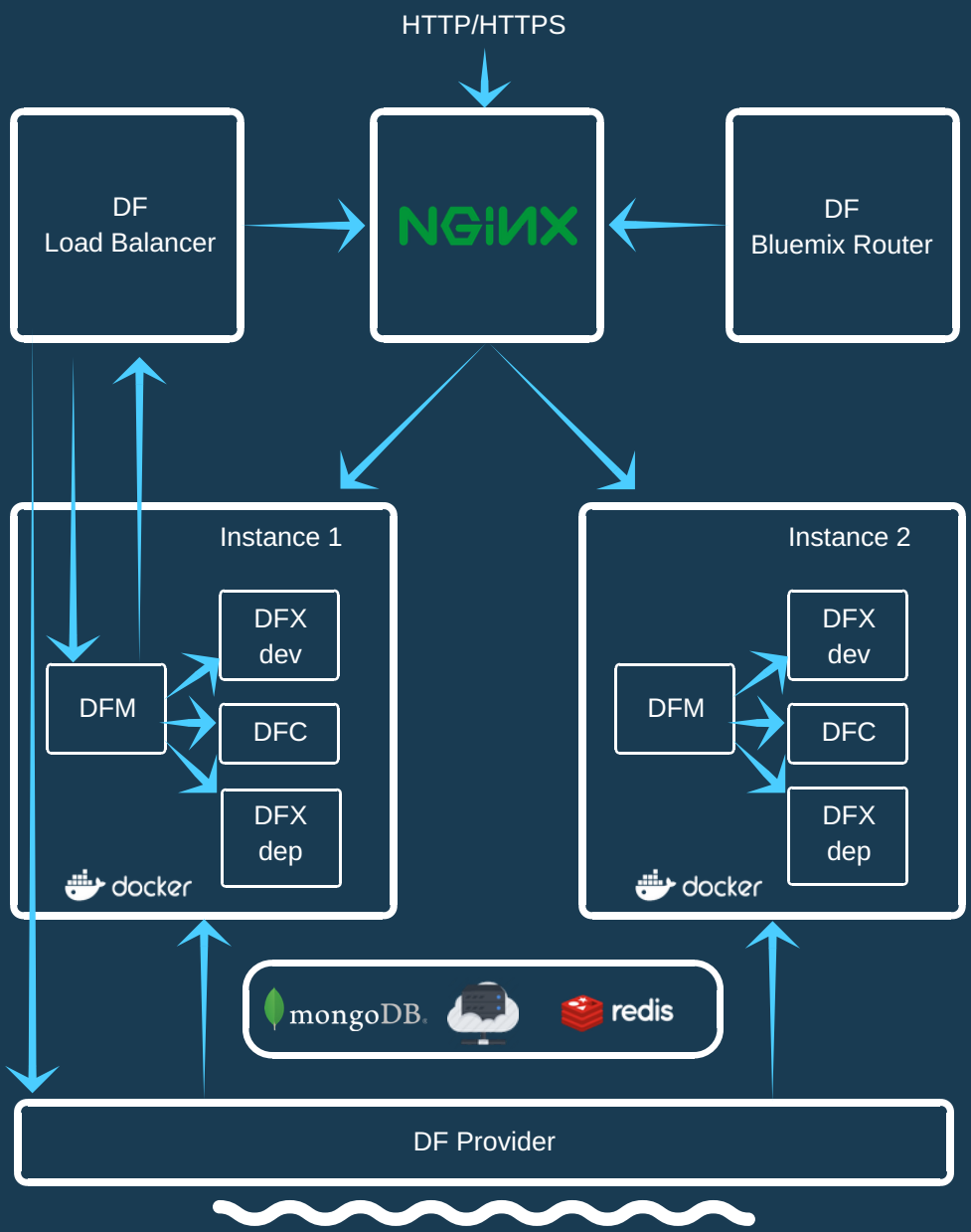
## PERFORMANCES

*Provide and benefit from an elastic architecture.*

# The Components

| | |
|---|---|
| DFX | DreamFace X-Platform, declined into 2 editions: DreamFace for Development (dev) & DreamFace for Deployment (dep) |
| DFC | DreamFace Compiler: compiles and deploy applications |
| DFM | DreamFace Manager: Starts, stops, updates and monitor each component of an instance (DFX dev, DFX dep, DFC) |
| DFLB | DreamFace Load Balancer: Manage load balancing of requests |
| DFP | DreamFace Provider: instantiates or decommissions instances |
| DFBR | DreamFace Bluemix Router: manage requests from Bluemix (create tenant, remove tenant, authenticate Bluemix user) |

# The Big Picture

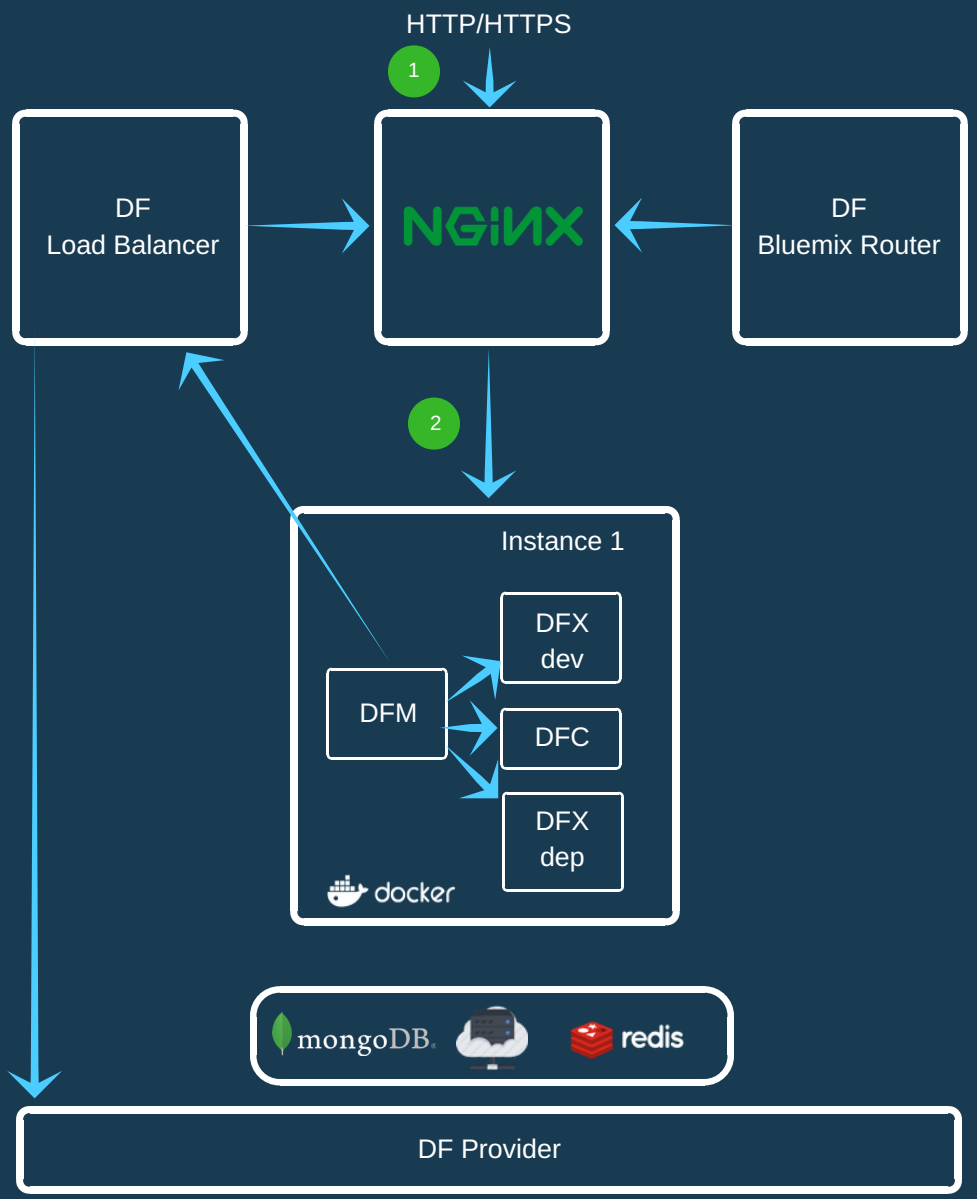


# The Scenario

## Normal Flow

**01 Load Balancing**

- (1) Some http requests are sent to NGINX from Internet
- (2) NGINX proxies all requests to Instance 1

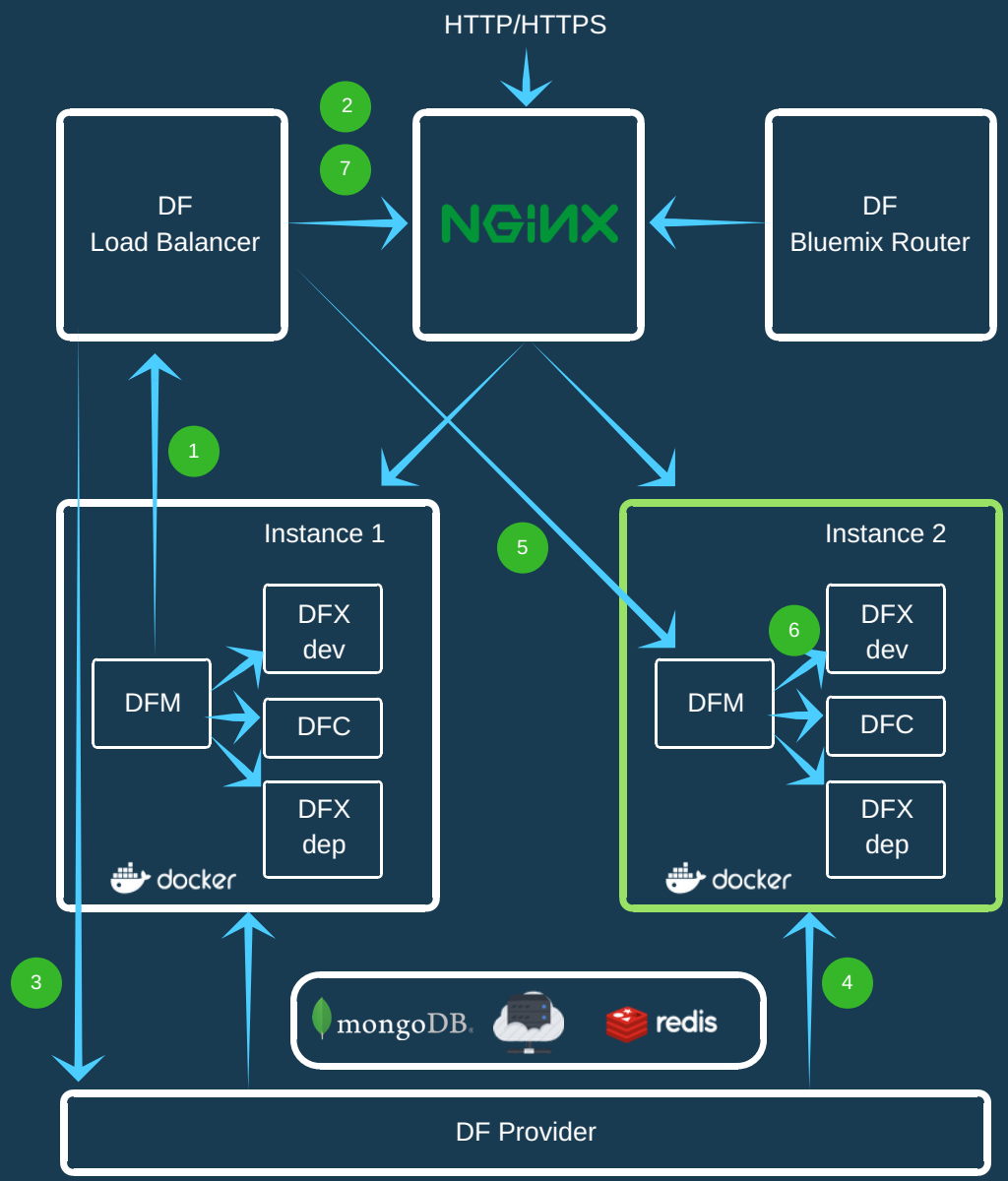


# The Scenario

## Instance Overload

**02 Load Balancing**

- (1) DFM (Instance 1) sends a notification to LB
- (2) DFLB asks NGINX for statistics and defines what tenants caused the overload
- (3) DFLB sends a request to DFP to create new instance
- (4) DFP creates a new instance (Instance 2) based on a Docker image
- (5) DFLB sends a request to DFM to start required components (ex: DFX dev), and its appropriate configuration (what tenants it should operate)
- (6) DFM starts the components, and responds to DFLB when it is completed
- (7) DFLB changes configuration of NGINX, so that it will proxy requests to both Instance 1 and Instance 2 depending of tenant ID



# The Scenario

## *Low Loaded Instance*

**03 Load Balancing**

- (1) DFM (instance 2) sends a notification to LB to inform about a low usage
- (2) DFLB changes NGINX configuration to not use Instance 2
- (3) DFLB sends a request to DFM (instance 2) for a graceful shutdown (all components are stopped, all pending requests terminated)
- (4) DFM notifies DFLB that all components are stopped
- (5) DFLB sends a request to DFP to remove instance 2
- (6) DFP removes the instance 2 Docker image